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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,176	10/03/2003	Andrew Ording	7394-0032	2296

7590 09/07/2005

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EXAMINER

BELLINGER, JASON R

ART UNIT	PAPER NUMBER
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3617

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/679,176	Applicant(s) ORDING ET AL.	
	Examiner Jason R. Bellinger	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-23 is/are pending in the application.
- 4a) Of the above claim(s) 7-13 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 16-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Allowable Subject Matter

1. The indicated allowability of claims 4-5 is withdrawn in view of the newly discovered reference(s) to Huntzinger. Rejections based on the newly cited reference(s) follow.

Drawings

2. The drawings were received on 9 June 2005. These drawings are approved.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-6 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huntzinger in view of Drews. Huntzinger shows a wheel 10 having a tire engaging portion 12 located at the outward perimeter of the wheel 10, an inner portion 14 located radially inward from the tire engaging portion 12, and first and second air engaging side portions 20 that extend radially between the inner portion 14 and the tire engaging portion 12. The first and second air engaging side portions 20 form first and second sides of the wheel 10, and are axially opposed to each other.

The inner portion is a hub 14. The hub 14 is separately fabricated from the first and second air engaging side surfaces 20, and connected at the center 22 thereof. The

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wheel 10 is disc shaped. While not shown, it is well known in the art that the wheel 10 would include a valve stem receiving aperture for use with the pneumatic tire 11.

The tire engaging portion 12 includes washer shaped side surfaces that act as brake engaging portions. The tire engaging portion 12 (including the adjacent brake engaging portions) are separately fabricated from the first and second air engaging side surfaces 20, and are connected at the outward perimeter of the first and second air engaging side surfaces 20.

Huntzinger does not show the air engaging side surfaces having a plurality of surface features designed to create a turbulent boundary layer when the wheel travels through air to reduce aerodynamic drag. Drews teaches the use of a wheel 2 having air engaging side surfaces that are provided with a plurality of surface features, in the form of protrusions 22, which create a turbulent boundary layer when the wheel travels through air, thus reducing aerodynamic drag.

Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the wheel of Huntzinger with protrusions on the side surfaces to decrease the amount of drag created while the wheel is rotating, thus allowing for increased speed with less effort.

The inner portion 14 of Huntzinger as modified by Drews could have a plurality of surface features thereon for the reasons set forth immediately above.

5. Claims 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huntzinger in view of Drews as applied to claims 1-6 and 16-18 above, and further in

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view of Blood. Huntzinger as modified by Drews does not show the surface features being circular shaped depressions. Nor does Huntzinger as modified by Drews specify that the surface features are design so that when the wheel moves through a body of air, the boundary layer separates from the side surfaces closer to the trailing edge of the wheel than a wheel lacking surface features.

Blood teaches the use of an air engaging side surface 34 having circular shaped depressions 21, which reduce drag and would cause a boundary layer to separate from the surface 34 closer to a trailing edge than a surface lacking the depressions 21. The depressions 21 have a depth between about 0.2 and 0.4 inches. Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the wheel of Huntzinger as modified by Drews with circular protrusions on the side surfaces to greatly reduce the amount of drag created while the wheel is rotating, thus greatly reducing the amount of effort required to gain speed.

Response to Arguments

6. Applicant's arguments with respect to claims 1-6 and 16-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Bellinger whose telephone number is 571-272-6680. The examiner can normally be reached on Mon - Thurs (9:00-4:30).

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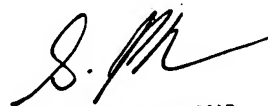
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason R Bellinger
Examiner
Art Unit 3617



jrb



S. JOSEPH MORANO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER